

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Group: Attorney Docket # 2088

Applicant(s) : PEUCHERT, U., ET AL

Serial No. :

Filed :

For : BOROSILICATE GLASS WITH HIGH CHEMICAL
RESISTANCE AND USE THEREOF

SIMULTANEOUS AMENDMENT

March 19, 2002

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

SIRS:

Simultaneously with filing of the above identified application
please amend the same as follows:

In the Claims:

Cancel all claims without prejudice.

Substitute the claims attached hereto.

REMARKS:

This Amendment is submitted simultaneously with filing of the above identified application.

With the present Amendment applicant has amended the claims so as to eliminate their multiple dependency.

10/088618
JC13 Rec'd PCT/PTO 19 MAR 2002

Consideration and allowance of the present application is most respectfully requested.

Respectfully submitted,


Michael J. Striker
Attorney for Applicant(s)
Reg. No. 27233

PATENT CLAIMS

1. A borosilicate glass of high chemicals resistance, characterized by a composition (in % by weight, based 5 on oxide) of:

	SiO ₂	70 - 77
	B ₂ O ₃	6 - < 11.5
	Al ₂ O ₃	4 - 8.5
10	Li ₂ O	0 - 2
	Na ₂ O	4 - 9.5
	K ₂ O	0 - 5
	with Li ₂ O + Na ₂ O + K ₂ O	5 - 11
	MgO	0 - 2
15	CaO	0 - 2.5
	with MgO + CaO	0 - 3
	ZrO ₂	0 - < 0.5
	CeO ₂	0 - 1

20 and, if appropriate, standard refining agents in standard amounts.

2. The borosilicate glass as claimed in claim 1, characterized by a composition (in % by weight, based 25 on oxide) of:

	SiO ₂	70.5 - 76.5
	B ₂ O ₃	6.5 - < 11.5
	Al ₂ O ₃	4 - 8
30	Li ₂ O	0 - 1.5
	Na ₂ O	4.5 - 9
	K ₂ O	0 - 5
	with Li ₂ O + Na ₂ O + K ₂ O	5.5 - 10.5
	MgO	0 - 1
35	CaO	0 - 2
	with MgO + CaO	0 - 3
	ZrO ₂	0 - < 0.5
	CeO ₂	0 - 1

and, if appropriate, standard refining agents in standard amounts.

3. The borosilicate glass as claimed in claim 1 [or 2]
 5 characterized in that it additionally contains (in % by weight, based on oxide):

SrO	0 - 1.5
BaO	0 - 1.5
10 with SrO + BaO	0 - 2
ZnO	0 - 1.

4. The borosilicate glass as claimed in [at least one of claims 1 to 3] ^{claim 1} characterized in that it additionally contains (in % by weight, based on oxide):

Fe ₂ O ₃ + Cr ₂ O ₃ + CoO	0 - 1
TiO ₂	0 - 3.

20 5. The borosilicate glass as claimed in [at least one of claims 1 to 4] ^{claim 1} characterized in that, apart from inevitable impurities, it is free of As₂O₃ and Sb₂O₃.

25 6. The borosilicate glass as claimed in [at least one of claims 1 to 5] ^{claim 1} having a coefficient of thermal expansion $\alpha_{20/300}$ of between > 5 and $6.0 \times 10^{-6}/K$, in particular between > 5.3 and $5.9 \times 10^{-6}/K$, and a working point V_A of at most 1180°C.

30 7. The use of the borosilicate glass as claimed in [at least one of claims 1 to 6] ^{claim 1} as sealing glass for Fe-Co-Ni alloys.

35 8. The use of the borosilicate glass as claimed in [at least one of claims 1 to 6] ^{claim 1} as instrument glass for laboratory applications and for the construction of chemical installations.

8. The use of the borosilicate glass as claimed in (at least one of claims 1 to 6) ^{claim 1} as primary packaging material for pharmaceuticals, for example as ampoule glass.

PATENT CLAIMS

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SiO ₂	70 - 77
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Li ₂ O	0 - 2
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K ₂ O	0 - 5
with Li ₂ O + Na ₂ O + K ₂ O	5 - 11
MgO	0 - 2
CaO	0 - 2.5
with MgO + CaO	0 - 3
ZrO ₂	0 - < 0.5
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20 and, if appropriate, standard refining agents in standard amounts.

2. The borosilicate glass as claimed in claim 1, characterized by a composition (in % by weight, based 25 on oxide) of:

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Al ₂ O ₃	4 - 8
Li ₂ O	0 - 1.5
Na ₂ O	4.5 - 9
K ₂ O	0 - 5
with Li ₂ O + Na ₂ O + K ₂ O	5.5 - 10.5
MgO	0 - 1
CaO	0 - 2
with MgO + CaO	0 - 3
ZrO ₂	0 - < 0.5
CeO ₂	0 - 1

and, if appropriate, standard refining agents in standard amounts.

3. The borosilicate glass as claimed in claim 1,
5 characterized in that it additionally contains (in % by weight, based on oxide):

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BaO	0 - 1.5
10 with SrO + BaO	0 - 2
ZnO	0 - 1.

4. The borosilicate glass as claimed in
claim 1 , characterized in that it additionally
15 contains (in % by weight, based on oxide):

Fe ₂ O ₃ + Cr ₂ O ₃ + CoO	0 - 1
TiO ₂	0 - 3.

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claim 1 , characterized in that, apart from
inevitable impurities, it is free of As₂O₃ and Sb₂O₃.

6. The borosilicate glass as claimed in
25 claim 1 having a coefficient of thermal
expansion $\alpha_{20/300}$ of between > 5 and $6.0 \times 10^{-6}/K$, in
particular between > 5.3 and $5.9 \times 10^{-6}/K$, and a working
point V_A of at most 1180°C.

30 7. The use of the borosilicate glass as claimed in
claim 1 , as sealing glass for
Fe-Co-Ni alloys.

8. The use of the borosilicate glass as claimed in
35 claim 1 as instrument glass for
laboratory applications and for the construction of
chemical installations.

8. The use of the borosilicate glass as claimed in
claim 1 as primary packaging
material for pharmaceuticals, for example as ampoule
glass.